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EXAMINER

CARLEY, JEFFREY T.

ART UNIT

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3729

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,273	Applicant(s) ZACH ET AL.	
	Examiner JEFFREY CARLEY	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-26 is/are rejected.
- 7) ☐ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Objections

Claims 1, 7, 11, 13 and 26 were previously objected to because of informalities. The examiner thanks the applicants for correcting said informalities. The objections of record are respectfully vacated.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 23 and 25 each recite the limitation "the common plane of movement". There is insufficient antecedent basis for this limitation in the claim. The examiner has interpreted the limitation, as best understood, to actually be the previously claimed "principle plane".

Claim 21 recites the limitation "said adjusting means and spindle drives" in line 11. There is insufficient antecedent basis for the "spindle drives" limitation in the claim. The examiner has interpreted the claim, as best understood, without the spindle drive limitation as it does not appear in independent claim 1, from which claim 21 directly depends.

Claims 6, 17, 20, 23 and 25 were previously rejected under 35 U.S.C. 112, 2nd paragraph. The examiner thanks the applicants for correcting the cited indefiniteness and antecedent basis issues. Accordingly, the 35 U.S.C. 112, 2nd paragraph rejections of record are respectfully vacated.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1, 3-10, 13, 14, 17-21, 23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Amesbichler et al (USP 5778517), hereinafter '517.

Regarding claim 1, '517 discloses an automatic driver device (5) for joining components (Abstract), in a driving station, the driver device comprising: a basic carrier (8) having a principle plane (fig. 4; any plane including x-y, x-z, and y-z); a plurality of automatic driver tools (19, 29) mounted on said basic carrier (col. 6, lines 10-17); an adjusting means (actuators 10, 11) (col. 6, lines 31-35), said automatic driver tools being movable in multiple directions (fig. 4; 10 adjusts in x-direction, and 11 adjusts in y-direction) in the principal plane of the base carrier by means of said adjusting means (and) wherein said driver tools are adjustable in position relative to each other (group 29 moves in multiple directions relative to group 19), a group of said plurality of driver tools being integrated in at least one screwdriver group (29) with at least one of said plurality of driver tools (19) not being integrated in said at least one screwdriver group and with said plurality of driver tools in said at least one screwdriver group being mounted together and moveable together as a group in the principal plane at the basic carrier, by means of said adjusting means, relative to said at least one of said plurality of driver tools not being integrated in said at least one screwdriver group (cols. 6-7, lines 48-67 and 1-22; figs. 3-5).

Regarding claim 3, '517 discloses the driver device in accordance with claim 1, wherein said adjusting means comprises a multistep multistage carriage unit (8, 12, 48 etc with adjusting means 10 and 11) that can be telescoped or cascaded (col. 5, lines 30-40; adjusting means 10 and 11 are pneumatic cylinders which are naturally expected to telescope in normal operation).

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Regarding claim 4, '517 discloses the driver device in accordance with claim 3, wherein the carriage unit has a plurality of said carriage stages (at least 12 and 24) that are movable relative to one another along at least one axis (col. 5, lines 49-53).

Regarding claim 5, '517 discloses the driver device in accordance with claim 4, wherein the carriage stages are mounted next to each other (figs. 3-5).

Regarding claim 6, '517 discloses the driver device in accordance with claim 4, wherein at least one said carriage stages (12), has a plate or frame subcarrier (48) with a plurality of said driver tools integrated in a screwdriver group (col. 6, lines 10-22).

Regarding claim 7, '517 discloses the driver device in accordance with claim 1, wherein at least one of said driver tools from the screwdriver group is arranged on at least one next carriage stage (48) (col. 6, lines 10-17).

Regarding claim 8, '517 discloses the driver device in accordance with claim 4, wherein the carriage stages have controllable carriage drives (47) of their own (col. 5, lines 49-53).

Regarding claim 9, '517 discloses the driver device in accordance with claim 1, wherein said adjusting means has a smaller width and length than the basic carrier (fig. 4).

Regarding claim 10, '517 discloses the driver device in accordance with claim 3, wherein a plurality of said carriage units are arranged next to each other on the basic carrier (figs. 3-5).

Regarding claim 13, '517 discloses the driver device in accordance with claim 1, wherein the driver tools have a bracket (46) and a driving unit (44) movable thereon along one or more axes (col. 5, lines 30-38).

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Regarding claim 14, '517 discloses a driver device (5) for joining components, in a driving station (figs. 1-2), the driver device comprising: a basic carrier (8); a plurality of automatic driver tools (19, 29) mounted on said basic carrier; an adjusting means (10, 11), said automatic driver tools being movable along a plurality of axes by means of said adjusting means (col. 5, lines 30-40), said plurality of driver tools being integrated in at least one screwdriver group and being mounted together movably at the basic carrier by means of said adjusting means wherein the driver tools have a bracket (12) and a driving unit (24) movable thereon along one or more axes and wherein a height adjusting means (47) is arranged between the bracket and the driving unit (col. 5, lines 49-53).

Regarding claim 17, '517 discloses the driver device in accordance with claim 1, wherein the basic carrier has a plate or frame design (frame design; fig. 3).

Regarding claim 18, '517 discloses the driver device in accordance with claim 1, wherein the basic carrier has a chassis (moveable carrier 6) and a rail guide (9 and/or 41), for withdrawing and extending from the driving station (col. 5, lines 11-25).

Regarding claim 19, '517 discloses the driver device in accordance with claim 1, wherein the basic carrier has a centering (40) and lifting unit (47) (col. 5, lines 30-53).

Regarding claim 20, '517 discloses the driver device in accordance with claim 19, wherein the centering and lifting unit comprises a plurality of introducing units (34) with lifting devices (25) (col. 5, lines 53-61).

Regarding claim 21, as best understood, '517 discloses the driver device in accordance with claim 1, further comprising: a control (sensors 31, and robot) connected to adjusting means

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of said driving unit (col. 4, lines 57-59; sensors used in conjunction with an autonomous robot would naturally be expected to include a control).

Regarding claim 23, '517 discloses a driving station (5) for joining components of vehicle bodies, the station comprising: an automatic driver device comprising a basic carrier (8) having a principle plane (fig. 4; any plane including x-y, x-z, and y-z), a plurality of automatic driver tools (19, 29) mounted on said basic carrier and an adjusting means (10, 11), said automatic driver tools being movable along a plurality of axes in the principal plane of the base carrier by means of said adjusting means wherein the driver tools are adjustable in position relative to each other (col. 5, lines 30-40), said plurality of driver tools including one group of driver tools (29) integrated in at least one screwdriver group and other driver tools (19), said one group of driver tools being mounted together and moveable together, in the common plane of movement at said basic carrier, relative to said other screwing tools by means of said adjusting means (cols. 6-7, lines 48-67 and 1-22; figs. 3-5).

Regarding claim 25, '517 discloses a process for joining components of vehicle bodies, in a driving station (5) with an automatic driver, the process comprising the steps of: providing a basic carrier (8) having a principle plane, and with a plurality of automatic driver tools (19, 29) mounted thereon and moveable along multiple axes in the principal plane of the base carrier by means of an adjusting means (10, 11) wherein said driving tools are adjustable in position relative to each other (col. 5, lines 30-40); integrating one group of said plurality of driver tools in a screwdriver group (29) with other driver tools (19) of said plurality of driver tools not being in said screwdriver group; and adjusting a position of said screwdriver group by movement of said one group of said plurality of driver tools together, in the common plane of movement at

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said basic carrier, relative to said other driver tools of said plurality of driver tools by means of said adjusting means (cols. 6-7, lines 48-67 and 1-22; figs. 3-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 11, 12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over ‘517 in view of Kvalheim (USP 5331732), hereinafter ‘732.

Regarding claims 2 and 26, ‘517 discloses all of the elements of the current invention as detailed above. ‘517, however, does not teach that the driver tools are additionally mounted movably in relation to one another by means of said adjusting means within said screwdriver group.

‘732 teaches that it is well known to utilize driver tools which are additionally mounted movably in relation to one another by means of said adjusting means within said screwdriver group (Abstract, #4; col. 2, lines 55-68).

It would have been obvious to one of ordinary skill in the art to have modified the current invention of ‘517 to incorporate the independently controlled driver tools within said screwdriver of ‘732. It is well known in the art that it is advantageous to apply multiple driven elements (ie screws or the like) with separate driving mechanisms and independently controllable from one another. The advantages of independently driven drivers within one group at least include the following from ‘732: Because each screwdriver is provided with its independent driving force

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(cylinder 60) in the event one or more screws jam as they are being driven, the remainder of the screwdrivers will continue to operate to drive their respective screws... (col. 7, lines 37-45). It would have been obvious to one of ordinary skill in the art to have incorporated the independent control of the drivers in order to decrease manufacturing cost as a result of reworking or lost/damaged parts.

Regarding claim 11, ‘517 discloses all of the elements of the current invention as detailed above. ‘517, however, does not teach that said adjusting means has, for each of said driver tools, a linear transverse adjusting means with a controllable adjusting drive.

‘732 teaches that it is well known to utilize an adjusting means that has, for each of said driver tools, a linear transverse adjusting means (linear drive cylinders, 60) with a controllable adjusting drive (electrically operated adjusting valves, 66) (cols. 6-7, lines 47-55 and 1-4, respectively).

Regarding claim 12, the modified ‘517 discloses all of the elements of the current invention as detailed above. ‘517, however, does not teach that the transverse adjusting means is arranged between the driver tools and the multistep carriage unit or a one-step longitudinal adjusting means.

‘732 teaches that it is well known that the transverse adjusting means could be arranged between the driver tools and the multistep carriage unit (machine frame, 1) (figs. 1, 3, 7, 12, 13 and 16).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over ‘517 in view of Applicant’s Admitted Prior Art, hereinafter AAPA.

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Regarding claim 16, ‘517 discloses a driver device (5) for joining components, in a driving station (figs. 1 and 2), the driver device comprising: a basic carrier (8); a plurality of automatic driver tools (19, 29) mounted on said basic carrier; an adjusting means (10, 11), said automatic driver tools being movable along a plurality of axes by means of said adjusting means (col. 5, lines 30-40), said plurality of driver tools being integrated in at least one screwdriver group and being mounted together movably at the basic carrier by means of said adjusting means wherein the driver tools have a bracket (12) and a driving unit (one of individual screwdriver units from 19 or 29) movable thereon along one or more. ‘517, however, does not teach that the driving unit has a driving spindle with a driving head and with a carried spindle drive.

AAPA teaches that it is well known to use a driving unit which has a driving spindle with a driving head and with a carried spindle drive (Applicant’s specification, par. 0003).

It would have been obvious to one of ordinary skill in the art to have modified the current invention of ‘517 to incorporate the spindle, driving head, and spindle drive of AAPA. The applicant has demonstrated that the claimed configuration is well known. Further, it is well known in the art that automatic screw-driving devices naturally are expected to have a spindle, a driving head, and a spindle drive.

Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over ‘517 in view of Official Notice of Facts.

Regarding claim 22, ‘517 discloses all of the elements of the current invention as detailed above. ‘517, however, does not teach that the control comprises a numeric multi-axis control.

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The examiner takes Official Notice of Facts that it is well known to use a control which comprises a numeric multi-axis control. '517 has disclosed that the drivers are robotic and automatically controlled. It is considered well known that automatic robotic drivers are naturally expected to be numerically controlled. The computer programs required to automate said robotic devices are necessarily numerical in nature

Regarding claim 24, the modified '517 teaches that a spindle carrier (24) is arranged between the components and the driver device (figs. 3-5).

Response to Arguments

Applicant's arguments with respect to claims 1, 22 and 24 have been considered but are moot in view of the new ground(s) of rejection.

With regards to previously objected claims 14-16, although the claims were objected to as allowable if rewritten in independent form, the objection further stated that any and all intervening claims must be included in the amended claims. The submitted amendment of claims 14-16 did not include the limitations of previously, as well as currently, rejected claim 13.

Allowable Subject Matter

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim **and** any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY CARLEY whose telephone number is (571)270-5609. The examiner can normally be reached on Monday through Thursday 8:00am-5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571)272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. Dexter Tugbang/
Primary Examiner
Art Unit 3729

/JTC, AU 3729/

May 2, 2011